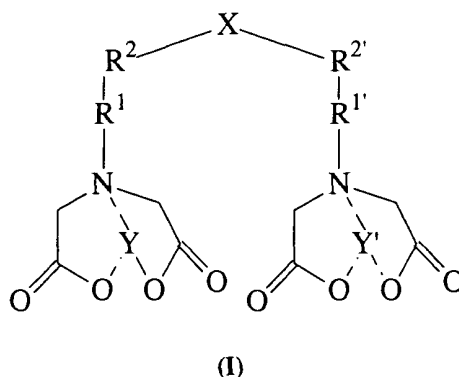


**BIS-TRANSITION-METAL-CHELATE PROBES****ABSTRACT OF THE INVENTION**

A molecule for labeling a target material is provided including two transition-metal chelates and a detectable group. The molecule has the general structural formula (I):



wherein: (a) Y and Y' are each a transition metal, (b) R<sup>1</sup> and R<sup>1'</sup> are each independently CH(COO<sup>-</sup>), CH(COOH), or absent; (c) R<sup>2</sup> and R<sup>2'</sup> are linkers each having a length of from about 3.0 to about 20 Å; and (d) X is a detectable group. The linkers may be linear or branched, may contain aromatic moieties, and may optionally be further substituted. Methods of using the molecules of the invention as probes in detecting and analyzing target materials as well as kits including the molecule of the invention are also provided.